Amendments to the Claims:

The listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

5 1. (Original) A video signal processing system for encoding an encoding bit stream according to characteristics of a decoding bit stream, the encoding and decoding bit streams include a plurality of encoding schemes, the video signal processing system comprising:

a storage device utilized for storing data of the decoding bit stream and the

10 encoding bit stream; and

an encoder electrically connected to the storage device for encoding the encoding bit stream according to an encoding scheme of the decoding bit stream, the memory bandwidth needed for a third encoding scheme out of the plurality of encoding schemes being greater than the memory bandwidth needed for any

15 other encoding scheme out of the plurality of encoding schemes, the encoder encoding the encoding bit stream using one of the plurality of encoding schemes except the third encoding scheme when the encoding scheme of the decoding bit stream is the third encoding scheme.

20 2. (Original) The video signal processing system of claim 1, wherein the plurality of encoding schemes include three encoding schemes, and in addition to the third encoding scheme, the three encoding schemes further include a first encoding scheme and a second encoding scheme.

25 3. (Original) The video signal processing system of claim 2, wherein the memory bandwidth needed for the first encoding scheme is less than the memory bandwidth needed for the second encoding scheme, and the memory bandwidth needed for the second encoding scheme is less than the memory bandwidth needed for the third encoding scheme.

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4. (Original)   The video signal processing system of claim 3, wherein the first, second, and third encoding schemes are the intra encoding, the predictive encoding, and the bidirectionally predictive encoding, respectively.

5   5. (Original)   The video signal processing system of claim 4, wherein when the encoding scheme of the decoding bit stream is the intra encoding, the encoding scheme of the encoding bit stream is one of the intra encoding, the predictive encoding, and the bidirectionally predictive encoding.

10   6. (Original) The video signal processing system of claim 4, wherein when the encoding scheme of the decoding bit stream is the predictive encoding, the encoding scheme of the encoding bit stream is one of the intra encoding, and the predictive encoding.

15   7. (Original)   The video signal processing system of claim 4, wherein when the encoding scheme of the decoding bit stream is the bidirectionally predictive encoding, the encoding scheme of the encoding bit stream is the intra encoding.

8. (Original)   The video signal processing system of claim 1, wherein the storage

20   device is a memory, and the video signal processing system further comprises a memory interface for controlling access to the memory.

9. (Original) The video signal processing system of claim 1 further comprising:
      a decoder electrically connected to the storage device for decoding the decoding

25   bit stream and sending the encoding scheme of the decoding bit stream to the encoder.

10. (Original) A video signal encoding and decoding method for encoding an encoding bit stream according to characteristics of a decoding bit stream, the encoding and

30   decoding bit streams include a plurality of encoding schemes, the video signal

3

encoding and decoding method comprising:

(a) checking an encoding scheme of the decoding bit stream to decide an encoding scheme for encoding the encoding bit stream; and

(b) encoding the encoding bit stream using one of the plurality of encoding schemes except a third encoding scheme when the encoding scheme of the decoding bit stream is the third encoding scheme, the memory bandwidth needed for the third encoding scheme being greater than the memory bandwidth needed for any other encoding scheme out of the plurality of encoding schemes.

11. (Original) The video signal encoding and decoding method of claim 10, wherein the plurality of encoding schemes include three encoding schemes, and in addition to the third encoding scheme, the three encoding schemes further include a first encoding scheme and a second encoding scheme.

12. (Original) The video signal encoding and decoding method of claim 11, wherein the memory bandwidth needed for the first encoding scheme is less than the memory bandwidth needed for the second encoding scheme, and the memory bandwidth needed for the second encoding scheme is less than the memory bandwidth needed for the third encoding scheme.

13. (Original) The video signal encoding and decoding method of claim 12, wherein the first, second, and third encoding schemes are the intra encoding, the predictive encoding, and the bidirectionally predictive encoding, respectively.

14. (Original) The video signal encoding and decoding method of claim 13, wherein when the encoding scheme of the decoding bit stream is the intra encoding the encoding scheme of the encoding bit stream is one of the intra encoding, the predictive encoding, and the bidirectionally predictive encoding.

15. (Original) The video signal encoding and decoding method of claim 13, wherein when the encoding scheme of the decoding bit stream is the predictive encoding the encoding scheme of the encoding bit stream is one of the intra encoding and the predictive encoding.

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16. (Original) The video signal encoding and decoding method of claim 13, wherein when the encoding scheme of the decoding bit stream is the bidirectionally predictive encoding, the encoding scheme of the encoding bit stream is the intra encoding.

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17. (Original) The video signal encoding and decoding method of claim 10, wherein the decoding bit stream and the encoding bit stream are both accessed through the same memory interface circuit corresponding to a memory.

15   18. (Original) The video signal encoding and decoding method of claim 10, wherein the encoding bit stream is an encoding bit stream corresponding to a picture.

19. (Original) The video signal encoding and decoding method of claim 10, wherein the encoding bit stream is an encoding bit stream corresponding to a block of a

20   picture.

20. (Original) The video signal encoding and decoding method of claim 19, wherein the block is a macroblock.

25   21. (Original) The video signal encoding and decoding method of claim 19, wherein the encoding scheme of the block is one of the intra encoding, the forward motion compensation encoding, the backward motion compensation encoding, and the bidirectional motion compensation encoding.

30   22. (Original) The video signal encoding and decoding method of claim 21 further

comprising:

encoding the block according to the intra encoding when the encoding scheme of the picture is the intra encoding.

5   23. (Original) The video signal encoding and decoding method of claim 21 further comprising:

encoding the block according to one of the intra encoding and the forward motion compensation encoding when the encoding scheme of the picture is the predictive encoding.

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24. (Original) The video signal encoding and decoding method of claim 21, further comprising:

encoding the block according to one of the intra encoding, the forward motion compensation encoding, the backward motion compensation encoding, and the

15   bidirectional motion compensation encoding when the encoding scheme of the picture is the bidirectionally predictive encoding.

25. (Original) The video signal encoding and decoding method of claim 21, further comprising:

20   encoding the block according to one of the forward motion compensation encoding, the backward motion compensation encoding, and the bidirectional motion compensation encoding when the encoding scheme of the picture is the bidirectionally predictive encoding.

25   26. (New) A real-time video processing method comprising:

decoding a first bitstream that is encoded by a plurality of first encoding schemes to obtain a first current encoding scheme, each of the plurality of first encoding schemes consuming different amount of memory bandwidth of a memory;

encoding a second bitstream with said memory and with a second current encoding

30   scheme selected from one of a plurality of second encoding schemes while the

6

first bitstream is decoded, wherein the second current encoding scheme is selected by choosing one second encoding scheme that consumes lower memory bandwidth of said memory if the first current encoding scheme indicates higher memory bandwidth of said memory being consumed so that the total necessary memory bandwidth of said memory shared by decoding the first bitstream and encoding the second bitstream is under maximum allowable bandwidth of the said memory during real-time video processing.

5